2.6 Hazards and Hazardous Materials

This section discusses potential impacts to the public resulting from potential hazards and hazardous materials resulting from implementation of the proposed project. In the United States, hazardous materials and wastes are defined and regulated at the federal, state, and local level. Hazardous wastes are defined in the Code of Federal Regulations (40 CFR 20) and also in the California Code of Regulations (22 CCR 66261.3). The information used in this analysis is general in nature and is derived from the most readily available information in applicable resource and planning documents.

2.6.1 Existing Conditions

This section of the Environmental Impact Report (EIR) is divided into discussions of potential hazards to public safety and the environment related to hazardous materials, airports, emergency response and evacuation plans, and wildland fire. This section also presents information on potential effects from exposure to electric and magnetic fields (EMF) and shadow flicker as they relate to public health and safety. The discussion on hazards and hazardous materials describes sites with known hazardous materials issues, sites with potential hazardous materials issues, hazardous materials transportation, hazardous materials disposal, and hazardous materials release threats. The discussion on airports examines existing airport facilities and potential operational hazards within the County of San Diego (County). The discussion on emergency response and evacuation plans identifies operations and plans that exist to protect lives and property in the event of a disaster within the County. The wildland fires discussion examines fire threat hazards, wildland–urban interface (WUI) areas, and the history of wildland fires in the County. Recognizing there is a great deal of public interest and concern regarding potential health effects and hazards from exposure to EMFs and shadow flicker, this section also provides information regarding these potential issues. However, this section does not consider EMFs or shadow flicker in the context of the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) for determination of environmental impact because there is no agreement among scientists that EMFs and shadow flicker create a health risk and because there are no defined or adopted CEQA/NEPA standards for defining health risks from EMFs and shadow flicker. As a result, the EMF and shadow flicker information is presented for the benefit of the public and decision makers.

Hazardous Materials

Hazardous materials are commonly encountered during construction activities. Hazardous materials typically require special handling, reuse, and disposal because of their potential to harm human health and the environment. The California Health and Safety Code, Section 25501, defines a hazardous material as:

Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Sites with Known Hazardous Materials Issues

A variety of government data sources are available to identify sites that may have been subject to a release of hazardous substances or that may have supported a use that could have resulted in a hazardous condition on site. Listed below are some key sources of data that identify potential environmental conditions and historical uses that may represent a hazardous condition on specific properties:

1. Hazardous Waste and Substances sites from California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) EnviroStor database
2. Leaking underground storage tank sites by county and fiscal year from the State Water Resources Control Board (SWRCB) GeoTracker database
3. Solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit
4. Active cease and desist orders (CDO) and cleanup and abatement orders (CAO) from the SWRCB
5. Hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the California Health and Safety Code, identified by DTSC
6. Active and closed solid waste sites (Solid Waste Inventory System (SWIS) database) maintained by the California Integrated Waste Management Board
7. Hazardous Materials Establishment Listing maintained by the County
8. The County maintains the Site Assessment and Mitigation (SAM) Case Listing of contaminated sites that have previously or are currently undergoing environmental investigations and/or remedial actions
9. Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. Environmental Protection Agency (EPA)
10. The U.S. Army Corps of Engineers (ACOE) list of Formerly Used Defense Sites (FUDS)
11. The DTSC School Property Evaluation and Cleanup Division is responsible for assessing, investigating and cleaning up proposed school sites. A list is maintained by DTSC of school properties with environmental assessments and the findings.

As of January 2007, all databases listed above (with the exception of database 3, list of solid waste disposal sites identified by SWRCB; database 5, list of hazardous waste facilities subject to corrective action by the California Health and Safety Code; and database 11, DTSC school property list) have identified sites located in unincorporated areas of the County. Databases with sites located in the unincorporated County are discussed below. Sites listed in the RCRIS and the Hazardous Materials Establishment databases were not included in this discussion because information contained in these databases is repetitive of other databases.

DTSC EnviroStor Database

This list includes the following site types: Federal Superfund Sites (National Priorities List); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites.

In the entire County, there are over 150 sites listed on the EnviroStor database. Approximately 22 of these are located in the unincorporated communities of Ramona, Borrego Springs, Fallbrook, Campo, Jacumba, Cuyamaca, Tecate, Boulevard, Rancho Santa Fe, Warner Springs, Pine Valley, Mount Laguna, and Lakeside (DTSC 2008).

GeoTracker Database

The GeoTracker database is a geographic information system that provides online access to environmental data, including underground fuel tanks, fuel pipelines, and public drinking water supplies. GeoTracker contains information about leaking underground fuel tanks (LUFTs) and data on non-LUFT cleanup programs, including Spills-Leaks-Investigations-Cleanups sites, Department of Defense (DOD) sites, and Land Disposal programs.

In the entire County, there are almost 8,000 sites listed in the GeoTracker Database. Of these 8,000, 66 are listed as "open" and of these, 19 are located in the unincorporated communities of Camp Pendleton, Descanso, Ramona, Campo, Mt. Laguna, and Lakeside. All 19 sites are classified as LUFTs (GeoTracker 2008).

Active CDO and CAO List

The list of active CDO and CAO from the SWRCB is a compilation of "all cease and desist orders issued after January 1, 1986, pursuant to Section 13301 of the Water Code, and all cleanup or abatement orders issued after January 1, 1986, pursuant to Section 13004 of the Water Code, that concern the discharge of wastes that are hazardous materials." The orders that are "active," meaning the necessary actions have not yet been completed, are on this list. The SWRCB updates this list by deleting sites when there is no longer any discharge of wastes and/or where the necessary cleanup or abatement actions were taken.

In the entire County, there are over 150 "active" CDO and/or CAO sites listed. Approximately 42 of these are located in the unincorporated communities of Borrego Springs, Camp Pendleton, Lakeside, Ramona, Rancho Santa Fe, and Valley Center (County of San Diego 2011).

SWIS Database

The SWIS database contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills; closed disposal sites; transfer stations; materials recovery facilities; composting sites; transformation facilities; waste tire sites; and construction, demolition, and inert debris facilities and operations.

There are 95 facility/site listings within both the incorporated and unincorporated areas of County that are under the jurisdiction of the County's Local Enforcement Agency (SWIS 2008).

County of San Diego SAM Program Case Listing

The County SAM Program, within the Land and Water Quality Division of the County of San Diego Department of Environmental Health (DEH), has a primary purpose to protect human health, water resources, and the environment within the County by providing oversight of assessments and cleanups in accordance with the California Health and Safety Code and the California Code of Regulations (CCR). The SAM's Voluntary Assistance Program also provides staff consultation, project oversight, and technical or environmental report evaluation and concurrence (when appropriate) on projects pertaining to properties contaminated with hazardous substances.

The SAM Program covers the entire County and includes remediation sites of all sizes. The SAM case listing is revised and updated regularly, and the number of sites on the list is continually changing but may contain more than 5,000 cases at one time. There is some overlap with the information in other regulatory databases; however, the list also contains sites that often are not covered by some of the larger regulatory databases. If future wind turbines or MET facility projects are submitted to the County for discretionary review and are located on a site found on the SAM list, the proposed project's status must be determined and any ongoing remediation requirements coordinated with the DEH SAM project manager.

FUDS Listing

The ACOE maintains a list of FUDS within the unincorporated County. FUDS are real properties that were under the jurisdiction of the Secretary of Defense and owned by, leased by, or otherwise possessed by the United States. FUDS are located throughout the United States and in many cases the ownership of these properties have been transferred to private individuals,

corporations, state and local governments, federal agencies, and tribal governments. FUDS include, but are not limited to, hazardous, toxic, and radioactive waste; military munitions including munitions constituents; containerized hazardous, toxic, and radioactive waste; building demolition and debris removal; and potentially responsible party sites (government shares burden with private entity).

There are approximately 146 FUDS in the County, including FUDS within incorporated cities. Many FUDS have potential hazardous waste contamination problems such as disposal areas and LUFTs. Other FUDS utilized practice rounds for training, and some FUDS used live munitions and explosives, known collectively as ordnance and explosives. The live munitions that were fired but did not detonate are known as unexploded ordnance. The unexploded ordnance that remain on FUDS properties today pose the greatest safety hazard to the public, if they are disturbed. Sites are ranked on a one to four scale, one being at the most risk for an increased hazard to the public and environment. Many FUDS sites in the County are under investigation by the ACOE to identify and remediate potential hazards. High-risk FUDS sites, with scores of one or two, are located in the communities of Lakeside, Otay, and Campo/Lake Morena. FUDS sites with lower risks are located with the communities of Borrego Springs and Ramona.

Sites with Potential Hazardous Materials Issues

A variety of historical land uses and conditions could potentially result in site contamination, representing potential hazards to humans and the environment when new land uses are proposed on those lands. Small turbines and MET facilities are considered to be accessory structures, and no new land uses would be proposed as part of the project. All future large turbine projects would be subject to discretionary review and required to obtain a Major Use Permit. Examples of historic land uses that have the potential to result in current site contamination include burnsites, landfills, formerly used defense sites, agriculture, and petroleum storage.

Burn Dump Sites

Burn ash refers to the debris, refuse, ash, and ash-contaminated soil that result from the open burning of municipal solid waste. Burn dump sites refer to locations where the open burning of solid waste occurred. Burn ash can be commingled with other solid wastes, including incompletely burned refuse. There are many environmental issues and concerns regarding the management of former burn dump sites. Burn ash may contain concentrations of heavy metals, such as lead, that may be a potential risk to human health and, if excavated, may need to be disposed as either a California or RCRA hazardous waste.

When properly managed, burn dump sites pose little to no potential risk to the environment or public health. During development activities, soil containing burn ash must be properly

managed. This includes minimizing dust migration and using appropriate best management practices (BMPs) to prevent surface erosion and the transportation of the burn ash. If the soil is to be exported from the site, care must be taken to ensure that it is disposed at an appropriate disposal facility.

The County Department of Public Works Landfill Management Unit manages six former burn dump sites within the County. Additional burn dump sites throughout the County are managed either by private property owners or other jurisdictions.

Landfills

Active, abandoned, and closed landfills present potential issues related to the exposure of humans to hazards, such as landfill gas migration, when a project is proposed on or near a landfill site.

Active Landfills

There are seven active landfills in the San Diego region that serve the residents, businesses, and military operations of both incorporated and unincorporated areas. The Sycamore, Otay, Ramona, and Borrego landfills are owned and operated by the private waste service company, Allied Waste Industries. Las Pulgas and San Onofre landfills are owned and operated by the U.S. Marine Corps, and the Miramar Landfill is owned and operated by the City of San Diego. The Marine Corps–operated landfills are not available for public disposal.

Transfer Stations

Solid waste not placed directly in the landfills is deposited temporarily in several privately operated transfer stations or rural bin sites located throughout the County. The region's transfer stations and bin sites play a vital role in accommodating throughput to landfills, serving as collection and separation points of solid waste and recyclables.

Inactive Landfills

The Landfill Management Unit of the County Public Works Department manages and maintains 11 closed landfills throughout the County and San Diego metro area, and it maintains the gas collection system at the Bell Jr. High Landfill located in the City of San Diego. At least 5 other closed landfills are maintained by other parties. Although closed landfill sites no longer accept solid waste, there is a great deal of maintenance required to keep them environmentally safe.

At inactive landfills, the County and others monitor landfill gas and maintain active landfill gas control systems, maintain the soil cover system, monitor groundwater quality and surface water,

and maintain storm water BMPs to ensure that closed landfills do not pollute surface or ground water, or pose an explosion or health hazard.

Historic Agriculture

Agricultural activities include the application of fertilizers, herbicides, and pesticides that have the potential to contaminate soil and groundwater. Soils contaminated by past agricultural activities are a growing concern, generally because of land use changes involving proposed housing developments on former agricultural lands. Small turbines and MET facilities are considered to be accessory structures, and no new land uses would be proposed as part of the project. All future large turbine projects would be subject to discretionary review and required to obtain a Major Use Permit. Investigation of suspected pesticide contamination on properties proposed for development typically includes soil and groundwater sampling in areas where materials were stored, handled, and mixed in addition to identifying the historical crops grown, pesticides applied, and the methods of application. The investigation and any remedial actions related to pesticide contamination focuses on the elimination of human or environmental exposure.

Petroleum

Petroleum hydrocarbons are the most commonly used group of chemicals in society today. Petroleum hydrocarbons encompass a wide range of compounds, including but not limited to fuels, oils, paints, dry cleaning solvents, and non-chlorinated solvents. These compounds are used in all facets of modern life and can cause soil and groundwater contamination if not properly handled. Underground storage tanks (USTs) and aboveground storage tanks (ASTs) that store petroleum are common sources of contamination into soils and groundwater in the County. Property owners with USTs and ASTs on their land often include marketers who sell gasoline to the public, such as service stations and convenience stores, or non-marketers who use tanks solely for their own needs, such as fleet service operators or agricultural users. Leaking USTs can result in vapor intrusion from volatile organic compounds and benzene into homes when chemicals seep down into the soil and groundwater and travel through soil as vapor. These vapors may then move up through the soil and into nearby buildings, through cracks in the foundation, causing contamination of indoor air. While vapor intrusion is uncommon, it should be considered when there is a known source of soil or groundwater contamination nearby.

Hazardous Waste Transportation

In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by the DTSC. The DTSC maintains a list of active registered hazardous waste transporters throughout the state. There are five registered hazardous waste transporters within the unincorporated areas of the County.

The process of transporting hazardous waste often involves transfer facilities. A transfer facility is any facility that is not an on-site facility that is related to the transportation of waste. These facilities include but are not limited to, loading docks, parking areas, storage areas, and other similar areas. Although not all transfer facilities hold hazardous waste, any operator of a facility that accepts hazardous waste for storage, repackaging, or bulking must obtain formal authorization for those activities through the hazardous waste permit process. Hazardous waste transporters are exempt from storage facility permit requirements so long as they observe the limits on storage time and handling.

Hazardous waste transfer facilities fall into three main categories:

1. An exempt transfer facility operated by a registered transporter
2. A transfer facility operating under the authority of a Resource Conservation and Recovery Act (RCRA) permit
3. A transfer facility operating under the authority of a Standardized Permit.

A transfer facility may be either permitted or exempt. The permit authorizes the activities and establishes the conditions that must be followed by the operator of a permitted transfer facility. Exempt facilities are owned and operated by the transporter of the waste.

Hazardous Materials Disposal

Through the RCRA, Congress directed the EPA to create regulations that manage hazardous waste from "the cradle to the grave." Under this mandate, the EPA has developed strict requirements for all aspects of hazardous waste management, including the recycling, treatment, storage, and disposal of hazardous waste. Facilities that provide recycling, treatment, storage, and disposal of hazardous waste are referred to as treatment, storage, and disposal facilities (TSDFs). Regulations pertaining to TSDFs are designed to prevent the release of hazardous materials into the environment and are more stringent than those that apply to generators or transporters. Within the unincorporated County, multiple TSDF sites exist, such as those owned and operated by the U.S. military and the San Diego Gas and Electric Company.

Hazardous Materials Release Threats

When unexpectedly released into the environment, hazardous materials may create a significant hazard to the public or environment. Hazardous materials are commonly stored and used by a variety of businesses within the County and could be released into the environment through improper handling or accident conditions. The following business plans and response systems are in place to help prevent hazardous material release threats.

Hazardous Materials Business Plans

Any business that handles, stores, or disposes of a hazardous substance at a given threshold quantity must prepare a Hazardous Materials Business Plan (HMBP). HMBPs intend to minimize hazards to human health and the environment from fires, explosions, or an unplanned release of hazardous substances into air, soil, or surface water. The HMBP must be carried out immediately whenever a fire, explosion, or unplanned chemical release occurs. An HMBP includes three sections: (1) an inventory of hazardous materials, including a site map, which details their location; (2) an emergency response plan; and (3) an employee-training program. HMBPs serve as an aid to employers and employees in managing emergencies at a given facility. They also help better prepare emergency response personnel for handling a wide range of emergencies that might occur at the facility.

The Hazardous Materials Division (HMD) of the DEH conducts routine inspections at businesses required to submit business plans. The purpose of these inspections is to (1) ensure compliance with existing laws and regulations concerning HMBP requirements, (2) identify existing safety hazards that could cause or contribute to an accidental spill or release, and (3) suggest preventative measures designed to minimize the risk of a spill or release of hazardous materials. After initial submission of an HMBP, the business must review and recertify the HMBP every year.

Risk Management Plans

Article 2 of Chapter 6.95 (California Health and Safety Code, Sections 25531–25543.3) requires the owner or operator of a stationary source with more than a threshold quantity of a regulated substance to prepare a Risk Management Plan (RMP). The state statutes and regulations combine federal and state program requirements for the prevention of accidental releases of listed substances into the atmosphere. The incorporation of the federal and state requirements have been designated the California Accidental Release Prevention (CalARP) program. CalARP requires that an RMP include a hazard assessment program, an accidental release prevention program, and an emergency response plan. The RMP must be revised every 5 years or as necessary. The majority of facilities or businesses in the County that have prepared RMPs are ammonia refrigeration facilities and water treatment and wastewater treatment plants that handle chlorine gas.

Hazardous Materials Emergency Response

The County of San Diego Department of Environmental Health, Hazardous Incident Response Team (DEH-HIRT) consists of ten California State Certified Hazardous Materials Specialists. The team was founded in 1981 by the Unified Disaster Council and is funded by a Joint Powers Agreement. This team services all unincorporated San Diego County areas, 18 municipalities, 2 military bases, and 5 Indian reservations. There are over 400 responses a year in the DEH-HIRT

operational area. DEH-HIRT responds jointly with the San Diego Fire-Rescue Department Hazardous Incident Response Team to investigate and mitigate chemically related emergencies or complaints. Emergency response activities include mitigation, containment, control actions, hazard identification, and threat evaluation to the local population and the environment. DEH-HIRT is also responsible for handling all after normal business hours complaints for the DEH. Recent DEH-HIRT incidents include responses to the 2007 firestorm, responses to fires at factories that store and use hazardous materials, and responses to accidents involving vehicles transporting fuel, liquid oxygen, pesticides, and other hazardous materials (DEH 2008).

Airport Hazards

Main areas of concern related to airport hazards are over-flight safety, airspace protection, flight patterns, and land-use compatibility. Hazards associated with airports can have serious human safety and quality of life impacts. Airports within the County include Agua Caliente Airstrip, Borrego Valley Airport, Fallbrook Community Airpark, Jacumba Airport, Ocotillo Airstrip, and Ramona Airport. The Gillespie Field and McClellan-Palomar Airports are also owned by the County but are located within incorporated areas. Residents in the unincorporated areas are also served by a number of airports located within incorporated cities, including San Diego International Airport (Lindbergh Field), Montgomery Field, Brown Field Municipal Airport, and Oceanside Municipal Airport. Aviation facilities provide a variety of aviation services to local residents, including civil aviation, government use, business flights, charter flights, flight schools, and helicopter operations.

Public Airport Hazard Prevention

Airport Land Use Compatibility Plans (ALUCPs) are plans that guide property owners and local jurisdictions in determining what types of proposed new land uses are appropriate around airports. They are intended to protect the safety of people, property, and aircraft on the ground and in the air in the vicinity of the airport. They also protect airports from encroachment by new incompatible land uses that could restrict their operations. ALUCPs are based on a defined area around an airport known as the Airport Influence Area, which is established by factors including airport size, operations, and configuration, as well as the safety, airspace protection, noise, and over-flight impacts on the land surrounding an airport. It is important to note that ALUCPs do not affect existing land uses. Structure replacement and infill development are generally permitted under ALUCPs, in accordance with policies established by the San Diego County Regional Airport Authority (SDCRAA). In December 2006, the SDCRAA adopted new ALUCPs for six rural airports operated by the County (Agua Caliente, Borrego Valley, Fallbrook, Jacumba, Ocotillo, and Ramona).

Airport safety zones are established for all public airports as part of the ALUCP, and land-use restrictions within safety zones are established to protect people and property on the ground and in the air. Safety zones were created to address the following three safety concerns:

1. Protecting people and property on the ground. Land use restrictions are implemented that include limiting the intensity of use, residential uses, and sensitive uses such as occupants with mobility issues and hazardous materials.
2. Minimizing injury to aircraft occupants. Land-use controls are implemented to preserve useful open land in the vicinity of the airport for an off-airport emergency landing.
3. Preventing creation of hazards to flight. Restrictions on building heights and objects in the approach and take-off flight paths are implemented, along with the limitation of land uses that would interfere with aircraft communication and navigation equipment or attract wildlife that pose a hazard to aircraft (such as large birds).

Military Airport Hazard Prevention

Guidelines set forth by the DOD as part of its Air Installation Compatible Use Zone (AICUZ) Program addresses land-use compatibility and safety policies for military airport runways. The AICUZ was initiated in the 1970s to recommend land uses that may be compatible with noise levels, accident potential, and flight clearance requirements associated with military airfield operations. The DOD prepared individual AICUZ plans for all major military airports. The objective of this program is to encourage compatible uses of public and private lands in the vicinity of military airfields through the local communities' comprehensive planning process.

The Accident Potential Zone (APZ) is unique to military airfields and is generally applied to all U.S. Navy and Marine Corps airfields within the United States. Designation of APZs is a component of the AICUZ. These zones describe the probable impact area if an accident were to occur based on historical accident data. Clear Zones, which are similar to a civilian airport RPZ, typically extend 3,000 feet beyond the end of the runway, measuring 1,500 feet wide at the runway and 2,284 feet wide at its outer edge. In addition, military airports designate two APZs (APZ-1 and APZ-2) that extend beyond the Clear Zone. Because military installations often lack land-use authority over the extent of an AICUZ, it is the responsibility of the local jurisdiction to ensure incompatible uses are not permitted or, if allowed, that they are properly regulated in these zones.

Private Airport Hazard Prevention

Safety-related hazards at private and special-use airports affect less land because of lower activity levels compared to public-use airports. In addition, the general public has very limited access to or ability to utilize these facilities due to their ownership by private citizens or public

agencies (such as the Bureau of Land Management or the U.S. Forest Service). Land use controls differ substantially between public airports and private airports. First, there are no Airport Influence Areas identified around these airports and land-use restrictions are much less defined than with public airports. Second, the California Department of Transportation's Division of Aeronautics controls private and special-use airports through a permitting process, and is also responsible for regulating operational activities at these airports.

Emergency Response and Evacuation Plans

Emergency response plans include elements to maintain continuity of government, emergency functions of governmental agencies, mobilization and application of resources, mutual aid, and public information. Emergency response plans are maintained at the federal, state, and local level for all types of disasters, including human-made and natural. It is the responsibility of government to undertake an ongoing comprehensive approach to emergency management in order to avoid or minimize the effects of hazardous events. Local governments have the primary responsibility for preparedness and response activities.

To address disasters and emergency situations at the local level, the Unified Disaster Council (UDC) is the governing body of the Unified San Diego County Emergency Services Organization. The UDC is chaired by a member of the County Board of Supervisors and comprised of representatives from the 18 incorporated cities. The County Office of Emergency Services (OES) serves as staff to the UDC.

Potential hazards or events that may trigger an emergency response action in the County include earthquakes, tsunamis, floods, wildland fires, landslides, droughts, hurricanes, tropical storms and freezes. Emergency response actions could also be triggered from a hazardous material incident, water or air pollution, a major transportation accident, water, gas, or energy shortage, an epidemic, a nuclear accident, or terrorism.

Operational Area Emergency Plan

In the County, there is a comprehensive emergency plan known as the Operational Area Emergency Plan (OAEP). Stand-alone emergency plans for the Operational Area include:

- San Diego County Nuclear Power Plant Emergency Response Plan;
- San Diego County Operational Area Oil Spill Contingency Element of the Area Hazardous Materials Plan;
- San Diego County Operational Area Emergency Water Contingencies Plan;
- Unified San Diego County Emergency Services Organization Operational Area Energy

Shortage Response Plan;

- Unified San Diego County Emergency Services Organization Recovery Plan;
- San Diego County Multi-Jurisdictional Hazard Mitigation Plan;
- San Diego Urban Area Tactical Interoperable Communications Plan; and
- San Diego County Draft Terrorist Incident Emergency Response Protocol.

In addition to the above plans, the OES maintains Dam Evacuation Plans for the Operational Area. Emergency plans for dam evacuation are necessary to plan for the loss of life, damage to property, displacement of people, and other ensuing hazards that can occur from dam failure. In the event of dam failure, damage control and disaster relief would be required and mass evacuation of the inundation areas would be essential to save lives.

Dam evacuation plans contain information concerning the physical situation, affected jurisdictions, evacuation routes, unique institutions and event responses. In addition, the plans include inundation maps showing direction of flow; inundation area boundaries; hospitals, schools, multipurpose staging areas; command posts/sites; and mass care and shelter facilities/sites. Unique institutions, as defined by the OES, include the following types of facilities: hospitals, schools, skilled nursing facilities, retirement homes, mental health care facilities, care facilities with patients that have disabilities, adult and childcare facilities, jails/detention facilities, stadiums, arenas and amphitheaters.

San Diego County Multi-Jurisdictional Hazard Mitigation Plan

The Multi-Jurisdictional Hazard Mitigation Plan was developed with the participation of all jurisdictions in the County including every incorporated city and the unincorporated County. The plan includes an overview of the risk assessment process, identifies hazards present in the jurisdiction, hazard profiles, and vulnerability assessments. The plan also identifies goals, objectives and actions for each jurisdiction in the County.

Hazards profiled in the plan include wildfire, structure fire, flood, coastal storms, erosion, tsunami, earthquakes, liquefaction, rain-induced landslide, dam failure, hazardous materials incidents, nuclear materials release, and terrorism. The plan sets forth a variety of objectives and actions based on a set of broad goals including: (1) promoting disaster-resistant future development; (2) increased public understanding and support for effective hazard mitigation; (3) building support of local capacity and commitment to become less vulnerable to hazards; (4) enhancement of hazard mitigation coordination and communication with federal, state, local, and tribal governments; and (5) reducing the possibility of damage and losses to existing assets, particularly people, critical facilities or infrastructure, and County owned facilities, due to dam

failure, earthquake, coastal storm, erosion, tsunami, landslides, floods, structural fire/wildfire, and manmade hazards.

Emergency Air Support

Helicopters and small planes are used in a variety of emergency response actions such as search and rescue operations and retrieving water to extinguish wildfires. During an emergency response, aircraft tend to fly low to the ground thus increasing the potential hazards to aircraft from towers and other objects within airspace. CAL FIRE and the County Sheriff's Department Aerial Support Detail, Air Support to Regional Enforcement Agencies (ASTREA) base carry out emergency response actions. CAL FIRE is the largest fire department in California and the third largest fire department in the U.S. Firefighters working for CAL FIRE are responsible for fulfilling their mission to provide comprehensive fire protection and other related emergency services, including protection of life and property. The County Sheriff's ASTREA operates aircraft throughout the County on a daily basis. These aircraft are involved in law enforcement, search and rescue, and fire-related missions.

Wildland Fire Hazards

A vast amount of the County's undeveloped lands support natural habitats such as grasslands, sage scrub, chaparral, and some coniferous forest. In the context of fire ecology, these areas are known as wildlands. Fire ecology research has shown that the natural fire regime for the shrublands and forests in the County was one of frequent small fires and occasional large fires. Modern society has interrupted and fractured the natural fire process by initiating fire suppression policies, introducing invasive plant species that burn readily such as eucalyptus trees, and building houses within or adjacent to wildland areas (known as wildland–urban interface (WUI) areas) such as the County's backcountry. Although fires can occur anywhere in the County, fires that begin in wildland areas pose a serious threat to personal safety and structures due to rapid spread and the extreme heat that these fires often generate. Past wildfires have taken lives, destroyed home and devastated hundreds of thousands of acres of the County's natural resources.

Fire Hazard Potential in the County

CAL FIRE has mapped areas of significant fire hazards in the County through their Fire and Resource Assessment Program (FRAP). These maps place areas of the County into different Fire Hazard Severity Zones (FHSZ) based upon fuels, terrain, weather, and other relevant factors. The majority of the unincorporated area of the County is State Responsibility Areas lands.

The FHSZ are divided into three levels of fire hazard severity: Moderate, High and Very High. The majority of the County is in the High and Very High FHSZ, except for the Desert and eastern

Mountain Empire Sub-regions which are in the Moderate FHRZ. There are also areas of Moderate FHSZ and un-zoned areas in the more densely populated communities around the County.

Wildland Urban Interface (WUI)

WUI is an area where development is located in close proximity to open space or lands with native vegetation and habitat that are prone to brush fires. The WUI creates an environment in which fire can move readily between structural and vegetation fuels. Once homes are built within or adjacent to natural habitat settings, it increases the complexity of fighting wildland fires because the goal of extinguishing the wildland fire is often superseded by protecting human life and private property.

The WUI is composed of communities that border wildlands or are intermixed with wildlands and where the minimum density exceeds one structure per 40 acres. WUI communities are created when the following conditions occur: (1) structures are built at densities greater than one unit per 40 acres; (2) the percentage of native vegetation is less than 50%; (3) the area is more than 75% vegetated; and (4) the area is within 1.5 miles of an area greater than a census block (1,325 acres).

Wildland Fire History in the County

The County has a long history of wildland fires. As identified in an annual report produced by CAL FIRE called "Wildfire Activity Statistics," The County is consistently listed among the top five counties in the state for both number of acres burned and dollar value of fire damage. In the County, fire season is typically defined from May through November, depending on variations in weather conditions. However, the threat of a wildland fire is always present and is influenced by weather conditions throughout the year.

The 2007 San Diego County firestorms were the second largest in County history, superseded only by the devastating firestorms of October 2003. The firestorms started on October 21, 2007, near the U.S./Mexico international border and burned throughout the County until the last fire was fully contained on November 9, 2007. At the height of the firestorms, there were seven separate fires burning in the County. The fires resulted in seven civilian deaths, 23 civilian injuries, and 89 firefighter injuries. More than 6,200 fire personnel fought to control the wildland fires but the fires consumed approximately 369,000 acres, or about 13% of the County's total land mass.

CAL FIRE mapped areas of significant fire hazards within the County. Areas are placed into different Fire Hazard Severity Zones (FHSZs) based upon fuels, terrain, weather, and other relevant factors. The County General Plan identifies Federal Responsibility Areas, which are areas where the U.S. Forest Service is responsible for wildfire protection; State Responsibility

Areas, which are areas where CAL FIRE is responsible for wildfire protection; and Local Responsibility Areas where local fire protection agencies are responsible for wildfire protection. The majority of the unincorporated area of the County is State Responsibility Area lands (see Figure 2.7-1, County of San Diego Existing Land Uses Map).

The FHSZs are divided into three levels of fire hazard severity: Moderate, High, and Very High. The majority of the County is in the High and Very High FHSZ, except for the Desert and eastern Mountain Empire Subregions, which are in the Moderate FHRZ. The Very High fire hazard severity designation can be attributed to a variety of factors, including highly flammable, dense, drought-adapted desert chaparral vegetation; seasonal, strong winds; and a Mediterranean climate that results in vegetation drying during the months most likely to experience Santa Ana winds.

As identified above, a WUI is an area where development is located in close proximity to open space or lands with native vegetation and habitat that are prone to brush fires. The WUI creates an environment in which fire can move readily between structural and vegetation fuels. WUI communities are created when the following conditions occur: (1) structures are built at densities greater than one unit per 40 acres; (2) the percentage of native vegetation is less than 50%; (3) the area is more than 75% vegetated; and (4) the area is within 1.5 miles of an area greater than a census block (1,325 acres). The 1.5-mile buffer distance was adopted according to the 2001 California Fire Alliance definition of vicinity, which is roughly the distance that pieces of burning wood can be carried from wildland fire to the roof of a structure (UW 2008).

Small Wind Turbine Performance and Safety Standard

The American Wind Energy Association (AWEA) is recognized by the American National Standards Institute (ANSI) as an Accredited Standards Developer. AWEA developed a Small Wind Turbine Performance and Safety Standard in 2009. This standard has been developed in a regimented ANSI process for "voluntary consensus standards," which requires participation from a range of representatives for manufacturers, technical experts, public sector agencies, and consumers. The following summarizes the safety information included in the standard.

Variable speed wind turbines are generally known to avoid harmful dynamic interactions with towers. Single/dual speed wind turbines are generally known to have potentially harmful dynamic interactions with their towers. Therefore, in the case of single/dual speed wind turbines, such as those using either one or two induction generators, the wind turbine and tower(s) must be shown to avoid potentially harmful dynamic interactions. A variable speed wind turbine with dynamic interactions, arising for example from control functions, must also show that potentially harmful interactions are likewise avoided.

Other safety aspects of the turbine system shall be evaluated, including the following:

1. Procedures to be used to operate the turbine
2. Provisions to prevent dangerous operation in high wind
3. Methods available to slow or stop the turbine in an emergency or for maintenance
4. Adequacy of maintenance and component replacement provisions
5. Susceptibility to harmful reduction of control function at the lowest claimed operating ambient temperature.

A safety and Function Test shall be performed in accordance with Section 9.6 of IEC 61400-2 ed.2. Additionally, the manufacturer shall submit design requirements for towers, including (1) mechanical and electrical connections, (2) minimum blade/tower clearance, (3) maximum tower top loads, and (4) maximum allowable tower top deflection.

Electric and Magnetic Fields

EMFs are distinct phenomena that occur both naturally and as a result of human activity across a broad spectrum. Naturally occurring electric and magnetic fields are caused by atmospheric conditions and earth's geomagnetic field. The fields caused by human activity result from technological application of the electromagnetic spectrum for uses such as communications, appliances, and the generation, transmission, and local distribution of electricity. Electric and magnetic fields are vector quantities that have the properties of direction and amplitude (field strength). Wind turbines create electromagnetic fields from the power facilities that are a part of the turbine makeup.

Electric Fields

Electric fields from power facilities are created whenever the facilities are energized, with the strength of the field dependent directly on the voltage of the line or facility creating it. Electric field strength is typically described in units of kilovolt per meter (kV/m). Electric field strength attenuates (gets weaker) rapidly as the distance from the source increases. Electric fields are reduced at many receptors because they are effectively shielded by most objects or materials such as trees or houses.

Unlike magnetic fields, which penetrate almost everything and are unaffected by buildings, trees, and other obstacles, electric fields are distorted by any object that is within the electric field, including the human body. Even trying to measure an electric field with electronic instruments is difficult because the devices themselves would alter the levels recorded. Determining an individual's exposure to electric fields requires the understanding of many variables, including the electric field itself, how effectively a person is grounded, and a person's body surface area within the electric field.

Electric fields in the vicinity of power lines or facilities can cause phenomena similar to the static electricity experienced on a dry winter day, or with clothing just removed from a clothes' dryer, and may result in nuisance electric discharges when touching long metal fences, pipelines, or large vehicles.

Magnetic Fields

Magnetic fields from power lines or facilities are created whenever current flows through power line or facility at any voltage. The strength of the field is directly dependent on the current in the line. Magnetic field strength is typically measured in milligauss (mG). Similar to electric field strength, magnetic field strength attenuates rapidly with distance from the source. Unlike electric fields, magnetic fields are not shielded by most objects or materials.

Comparison of Electric and Magnetic Fields

The nature of electric and magnetic fields can be illustrated by considering a household appliance. When the appliance is energized by being plugged into an outlet but not turned on so no current would be flowing through it, an electric field would be generated around the cord and appliance, but no magnetic field would be present. If the appliance is switched on, the electric field would still be present, and a magnetic field would be created. The electric field strength is directly related to the magnitude of the voltage from the outlet, and the magnetic field strength is directly related to the magnitude of the current flowing in the cord and appliance.

Shadow Flicker

Shadow flicker is commonly defined as alternating changes in light intensity at a given stationary location. In order for shadow flicker to occur, three conditions must be met:

- The sun must be shining with no clouds obscuring the sun;
- The rotor blades must be spinning and be located between the receptor and the sun; and
- The receptor must be sufficiently close to the turbine to be able to distinguish a shadow created by the turbine.

Concerns are occasionally raised about adverse health effects caused by shadow flicker such as annoyance, stress and/or seizures in persons with photosensitive epilepsy. Concerns are also sometimes raised about shadow flicker on roadways distracting drivers and causing accidents. These are discussed and analyzed in Section 2.6.7.

2.6.2 Regulatory Setting

Numerous federal, state, and local regulations have been enacted to prevent or mitigate damage to public health and safety and the environment from the release or threatened release of hazardous substances into the workplace or environment, and to protect human health and environmental resources from existing site contamination. The regulations below are relevant to the topics of hazardous substances and site contamination.

Federal Regulations

Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under RCRA. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. DTSC is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, Cal/EPA has in turn delegated enforcement authority to the County for state law regulating hazardous waste producers or generators.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) of 1986

Congress enacted CERCLA, commonly known as Superfund, on December 11, 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. SARA amended the CERCLA on October 17, 1986. SARA stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites; required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; provided new enforcement authorities and settlement tools; increased state involvement in every phase of the Superfund program; increased the focus on human health problems posed by hazardous waste sites; encouraged greater citizen participation in making decisions on how sites should be cleaned up; and increased the size of the trust fund to $8.5 billion.

Chemical Accident Prevention Provisions

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. These rules, which built upon existing industry codes and standards, require companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program.

Emergency Planning Community Right-to-Know Act (EPCRA)

The EPCRA, also known as SARA Title III, was enacted in October 1986. This law requires any infrastructure at the state and local levels to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301 through 312 are administered by EPA's Office of Emergency Management. EPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, SARA Title III is implemented through CalARP.

Hazardous Materials Transportation Act

The U.S. Department of Transportation regulates hazardous materials transportation under Title 49 of the CFR. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation. Title 49 CFR reflects laws passed by Congress as of January 2, 2006.

EPA Region 9, Preliminary Remediation Goals (PRGs)

Region 9 is the Pacific Southwest Division of the EPA, which includes Arizona, California, Hawaii, Nevada, Pacific Islands, and over 140 Tribal Nations. PRGs are tools for evaluating and cleaning up contaminated sites. PRGs for the Superfund/RCRA programs are risk-based concentrations, derived from standardized equations combining exposure information assumptions with EPA toxicity data. They are considered to be protective for humans (including sensitive groups) over a lifetime. However, PRGs are not always applicable to a particular site and do not address non-human health issues such as ecological impacts. Region 9's PRGs are viewed as agency guidelines, not legally enforceable standards.

International Fire Code (IFC)

The IFC, created by the International Code Council, is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code (IBC) use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every three years.

Federal Aviation Administration (FAA) Functions

The FAA has primary responsibility for the safety of civil aviation. The FAA's major functions regarding hazards include the following: (1) Developing and operating a common system of air traffic control and navigation for both civil and military aircraft; (2) Developing and implementing programs to control aircraft noise and other environmental effects of civil aviation; (3) Regulating U.S. commercial space transportation; and (4) Conducting reviews to determine that the safety of persons and property on the ground are protected.

U.S. Department of Defense (DOD) Air Installations Compatible Use Zone (AICUZ) Program

Safety compatibility criteria for military air bases are set forth through the AICUZ Program administered by the DOD. This Program applies to military air installations located within the U.S., its territories, trusts, and possessions. The AICUZ Program has the following four purposes: (1) to set forth DOD policy on achieving compatible use of public and private lands in the vicinity of military airfields; (2) to define height and land use compatibility restrictions; (3) to define procedures by which AICUZ may be defined; and (4) to provide policy on the extent of Government interest in real property within these zones that may be retained or acquired to protect the operational capability of active military airfields.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L. 93-288), as amended, (42 U.S.C. Sections 5121–5206), and Related Authorities

CFR Sections 206.31–206.48, provide the statutory framework for a presidential declaration of an emergency or a declaration of a major disaster. Such declarations open the way for a wide range of federal resources to be made available to assist in dealing with an emergency or major disaster. The Stafford Act structure for the declaration process reflects the fact that federal resources under this act supplement state and local resources for disaster relief and recovery.

Except in the case of an emergency involving a subject area that is exclusively or preeminently in the federal purview, the governor of an affected state, or acting governor if the governor is not available, must request such a declaration by the president.

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that: (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency.

State Regulations

Government Code Section 65962.5 (a), Cortese List

The Hazardous Waste and Substance Sites Cortese List is a planning document used by the state, local agencies and developers to comply with the California Environmental Quality Act (CEQA) requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the Cal/EPA to develop at least annually an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

The California Health and Safety Code, Hazardous Materials Release Response Plans and Inventory

Two programs found in Chapter 6.95 of the California Health and Safety Code are directly applicable to the California Environmental Quality Act (CEQA) issue of risk due to hazardous substance release. In the County, these two programs are referred to as the HMBP program, as previously discussed, and the CalARP program. The County DEH Hazardous Materials Division is responsible for the implementation of the HMBP and CalARP programs. The programs provide threshold quantities for regulated hazardous substances. When the indicated quantities are exceeded, an HMBP or RMP is required pursuant to this regulation. Congress requires the EPA Region 9 to make RMP information available to the public through the EPA's Envirofacts Data Warehouse. The Envirofacts Data Warehouse is considered the single point of access to select EPA environmental data.

Title 14 Division 1.5 of the California Code of Regulations

CCR Title 14 Division 1.5 establishes the regulations for CAL FIRE and is applicable in all State Responsibility Areas (SRA)—areas where CAL FIRE is responsible for wildfire protection. Most of the unincorporated area of the County is SRA and any development in these areas must comply with these regulations. Among other things, Title 14 establishes minimum standards for emergency access, fuel modification, setback to property line, signage, and water supply.

Title 22 of the California Code of Regulations & Hazardous Waste Control Law, Chapter 6.5

The DTSC regulates the generation, transportation, treatment, storage and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment. Cal/EPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other CUPAs, including the San Diego County DEH.

Title 23 of the California Code of Regulations (CCR), Underground Storage Tank (UST) Act

The UST monitoring and response program is required under Chapter 6.7 of the California Health and Safety Code and Title 23 of the CCR. The program was developed to ensure that the facilities meet regulatory requirements for design, monitoring, maintenance, and emergency response in operating or owning USTs. The County DEH is the local administering agency for this program.

Title 27 of the CCR, Solid Waste

Title 27 of the CCR contains a waste classification system that applies to solid wastes that cannot be discharged directly or indirectly to waters of the state and which therefore must be discharged to waste management sites for treatment, storage, or disposal. The California Integrated Waste Management Board (CIWMB) and its certified Local Enforcement Agency (LEA) regulate the operation, inspection, permitting and oversight of maintenance activities at active and closed solid waste management sites and operations.

California Health and Safety Code, Section 25270 et al., Aboveground Petroleum Storage Act

The Aboveground Petroleum Storage Act requires registration and spill prevention programs for AST that store petroleum. In some cases, ASTs for petroleum may be subject to groundwater monitoring programs that are implemented by the Regional Water Quality Control Boards and the SWRCB. The County DEH is the local administering agency for this program.

California Human Health Screening Levels (CHHSLs)

The CHHSLs or "Chisels" are concentrations of 54 hazardous chemicals in soil or soil gas that Cal/EPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment on behalf of Cal/EPA. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the EPA and Cal/EPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSL can be assumed to not pose a significant health risk to people who may live or work at the site. There are separate CHHSLs for residential and commercial/industrial sites.

SB 1889, Accidental Release Prevention Law/California Accidental Release Prevention Program (CalARP)

SB 1889 required California to implement a new federally mandated program governing the accidental airborne release of chemicals promulgated under Section 112 of the Clean Air Act. Effective January 1, 1997, CalARP replaced the previous California Risk Management and Prevention Program and incorporated the mandatory federal requirements. CalARP addresses facilities that contain specified hazardous materials, known as "regulated substances" that, if involved in an accidental release, could result in adverse off-site consequences. CalARP defines regulated substances as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

Emergency Response to Hazardous Materials Incidents

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government, and private agencies. The plan is administered by the California Emergency Management Agency (Cal EMA) and includes response to hazardous materials incidents. Cal EMA coordinates the response of other agencies, including Cal/EPA, California Highway Patrol, California Department of Fish and Game, Regional Water Quality Control Board, San Diego Air Pollution Control District, the City of San Diego Fire Department, and DEH-HIRT.

California Fire Code (CFC)

The CFC is Chapter 9 of Title 24 of the California Code of Regulations. It is created by the California Building Standards Commission and it is based on the International Fire Code created by the International Code Council. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may

pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code (CBC) use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every three years.

California Education Code (CEC)

The CEC establishes the law for California public education. CEC requires that the DTSC be involved in the environmental review process for the proposed acquisition and/or construction of school properties that will use state funding. The CEC requires a Phase I Environmental Site Assessment be completed prior to acquiring a school site or engaging in a construction project. Depending on the outcome of the Phase 1 Environmental Site Assessment, a Preliminary Environmental Assessment and remediation may be required. The CEC also requires potential, future school sites that are proposed within two miles of an airport to be reviewed by Caltrans Division of Aeronautics. If Caltrans does not support the proposed site, no state or local funds can be used to acquire the site or construct the school.

California State Aeronautics Act

The State Aeronautics Act is implemented by Caltrans Division of Aeronautics. The purpose of this Act is to: (1) foster and promote safety in aeronautics; (2) ensure state provide laws and regulations relating to aeronautics are consistent with federal aeronautics laws and regulations; (3) assure that persons residing in the vicinity of airports are protected against intrusions by unreasonable levels of aircraft noise; and (4) develop informational programs to increase the understanding of current air transportation issues. Caltrans Division of Aeronautics issues permits for and annually inspects hospital heliports and public-use airports, makes recommendations regarding proposed school sites within two miles of an airport runway, and authorizes helicopter landing sites at/near schools.

State Fire Regulations

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which include regulations concerning building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The state fire marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

California Emergency Services Act

This Act was adopted to establish the state's roles and responsibilities during human-made or natural emergencies that result in conditions of disaster and/or extreme peril to life, property, or the resources of the state. This Act is intended to protect health and safety by preserving the lives and property of the people of the state.

California Natural Disaster Assistance Act (NDAA)

The NDAA provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster. The NDAA is activated after the following occurs: (1) a local declaration of emergency; or (2) Cal EMA gives concurrence with the local declaration, or the Governor issues a Proclamation of a State Emergency. Once the NDAA is activated, local government is eligible for certain types of assistance, depending upon the specific declaration or proclamation issued.

Local Regulations and Programs

San Diego County, Site Assessment and Mitigation (SAM) Program

The County DEH maintains the Site Assessment and Mitigation (SAM) list of contaminated sites that have previously or are currently undergoing environmental investigations and/or remedial actions. The County SAM Program, within the Land and Water Quality Division of the DEH, has a primary purpose to protect human health, water resources, and the environment within the County by providing oversight of assessments and cleanups in accordance with the California Health and Safety Code and CCR. SAM's Voluntary Assistance Program also provides staff consultation, project oversight, and technical or environmental report evaluation and concurrence (when appropriate) on projects, including properties contaminated with hazardous substances.

San Diego County Board Policy I-132, Valley Center Mitigation Policy

This policy was developed to ensure that the mitigation outlined in the Environmental Impact Report (EIR) for the Valley Center Septic Moratorium/Board of Supervisors Policy I-78 Amendment is enforced. One aspect of this Board Policy includes a requirement to investigate for the existence of contaminated soils or hazardous operations in the area covered by the EIR. Specifically, the policy states, "A hazardous materials assessment shall be conducted by a certified entity for any parcel proposed for development with the potential for the existence of contaminated soils or hazardous materials such as parcels historically utilized for agricultural operations. The purpose of the hazardous materials assessment would be to identify the

presence/absence of hazardous materials and identify remediation measures that shall be implemented prior to development of the project site."

County of San Diego Code of Regulatory Ordinances Sections 68.401-68.406, Combustible Vegetation and Other Flammable Materials Ordinance

This ordinance addresses the accumulation of weeds, rubbish, and other materials on a private property found to create a fire hazard and be injurious to the health, safety, and general welfare of the public. The ordinance constitutes the presence of such weeds, rubbish, and other materials as a public nuisance, which must be abated in accordance with the provisions of this section. This ordinance is enforced all County Service Areas (CSAs), and in the unincorporated areas of the County outside of a fire protection district. All fire protection districts have a combustible vegetation abatement program, and many fire protection districts have adopted and enforce the County's ordinance.

County of San Diego Code of Regulatory Ordinances Sections 96.1.005 and 96.1.202, Removal of Fire Hazards

The San Diego County Fire Authority, in partnership with CAL FIRE, the Bureau of Land Management, and the US Forest Service, is responsible for the enforcement of defensible space inspections. Inspectors from CAL FIRE are responsible for the initial inspection of properties to ensure an adequate defensible space has been created around structures. If violations of the program requirements are noted, inspectors provide a list of required corrective measures and provide a reasonable timeframe to complete the task. If the violations still exist upon re-inspection, the local fire inspector will forward a complaint to the County for further enforcement action.

County of San Diego Consolidated Fire Code

The County of San Diego, in collaboration with the local fire protection districts, created the first Consolidated Fire Code in 2001. The Consolidated Fire Code contains the County and fire protection districts amendments to the California Fire Code. The purpose of consolidation of the County and local fire districts adoptive ordinances is to promote consistency in the interpretation and enforcement of the Fire Code for the protection of the public health and safety, which includes permit requirements for the installation, alteration, or repair of new and existing fire protection systems, and penalties for violations of the code. The Code provides the minimum requirements for access, water supply and distribution, construction type, fire protection systems, and vegetation management. Additionally, the fire code regulates hazardous materials and associated measures to ensure that public health and safety are protected from incidents relating to hazardous substance releases.

County DPLU Fire Prevention in Project Design Standards

Following the October 2003 Wildfires, the County's DPLU incorporated a number of fire prevention strategies into the discretionary project review process for CEQA projects. One of the more significant changes is the requirement that the majority of discretionary permits (e.g., subdivision and use permits) in WUI areas prepare a Fire Protection Plan (FPP) for review and approval. An FPP is a technical report that considers the topography, geology, combustible vegetation (fuel types), climatic conditions and fire history of the proposed project location. The plan addresses the following in terms of compliance with applicable codes and regulations including but not limited to: water supply, primary and secondary access, travel time to the nearest fire station, structure setback from property lines, ignition-resistant building features, fire protection systems and equipment, impacts to existing emergency services, defensible space and vegetation management.

2.6.3 Analysis of Project Effects and Determination as to Significance

The proposed project consists of amendment to the Zoning Ordinance related to wind turbines and temporary MET facilities. Under the proposed project, large turbines will continue to require approval of a Major Use Permit, while a small wind turbine or MET facility meeting the height designator of the zone in which it is located would be allowed without discretionary review. The following impact analysis has been separated into "Small Turbine(s)/MET Facilities" and "Large Turbine(s)" to reflect the distinction in the level of review required for the establishment of each use (discretionary vs. non-discretionary).

2.6.3.1 Hazardous Substance Handling

Guidelines for Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Hazardous Materials and Existing Contamination* (County of San Diego 2007a) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis.

A significant impact would result if:

- The project would create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials.

Analysis

The proposed Zoning Ordinance amendment applies to the entire unincorporated County with regard to small turbines and MET facilities and to a significant portion of the unincorporated

County with regard to large turbines (see Section 1.4, Project Description); therefore, it includes all hazardous materials in the County. The proposed project would allow development of wind turbines and MET facilities in the County. Although these facilities are not expected to involve the use, disposal or transport of hazardous materials, temporary construction activities or demolition may potentially involve hazardous materials. Numerous federal, state, and local regulations exist that require strict adherence to specific guidelines regarding the use, transportation, and disposal of hazardous materials. Regulations that would be required of those transporting, using or disposing of hazardous materials include RCRA, CERCLA, the Hazardous Materials Transportation Act, IFC, Title 22, CCR Title 27, and the County Consolidated Fire Code.

For development within the state, Government Code Section 65850.2 requires that no final certificate of occupancy or its substantial equivalent be issued unless there is verification that the owner or authorized agent has met, or is meeting, the applicable requirements of the Health and Safety Code, Division 20, Chapter 6.95, Article 2, Sections 25500 through 25520. The County DEH-HMD is the Certified Unified Program Agency (CUPA) for the County responsible for enforcing Chapter 6.95 of the Health and Safety Code. As the CUPA, the DEH-HMD is required to regulate hazardous materials business plans and chemical inventory, hazardous waste and tiered permitting, underground storage tanks, and risk management plans.

Small Turbine(s) and MET Facilities

Future small wind turbines or MET facilities do not involve the routine use and storage of hazardous materials since these facilities serve as accessory structures. The only potentially toxic or hazardous materials are relatively small amounts of lubricating oils and hydraulic and insulating fluids. Future small wind turbines would not result in a significant hazard to the public or environment because any storage, handling, transport, emission, and disposal of hazardous substances would be in full compliance with local, state, and federal regulations.

A project could propose to demolish or renovate structures on site that were constructed prior to 1980 and that may contain lead-based paint and asbestos-containing materials. Lead is a highly toxic metal that was used up until 1978 in paint used on walls, woodwork, siding, windows, and doors. Lead-containing materials shall be managed by applicable regulations including, at a minimum, the hazardous waste disposal requirements (22 CCR, Division 4.5), the worker health and safety requirements (8 CCR 1532.1), and the State Lead Accreditation, Certification, and Work Practice Requirements (17 CCR, Division 1, Chapter 8). Asbestos was used extensively from the 1940s until the late 1970s in the construction industry for fireproofing, thermal and acoustic insulation, condensation control, and decoration. The EPA has determined that there is no "safe" exposure level to asbestos. It is, therefore, highly regulated by the EPA, Cal/EPA, and the California Occupational Safety and Health Administration. Demolition or renovation operations that involve asbestos-containing materials must conform to SDAPCD Rules 361.140–

361.156. In accordance with existing regulations, future wind turbines would be required to complete asbestos and lead surveys to determine the presence or absence of asbestos-containing materials or lead-based paint prior to issuance of a building permit that includes demolition of on-site structures and prior to commencement of demolition or renovation activities. Due to regulatory requirements related to hazardous substances outlined above and the fact that the initial planning, ongoing monitoring, and inspections would occur in compliance with local, state, and federal regulation, the project would not result in any potentially significant impacts related to the routine transport, use, and disposal of hazardous substances.

Temporary construction activities could involve transportation of wastes from demolition/renovation of structures. These hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone, and use of these materials for their intended purpose, would not pose a significant risk to the public or the environment. Some small wind turbines such as roof-mounted turbines would not require construction vehicles or equipment at the project site, as these facilities can typically be installed by the property owner. Impacts are anticipated to be **less than significant.**

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large wind turbines. These updates are necessary to address advancements in technology that have obviated many of the current provisions. The proposed amendment related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible. All future large turbine projects would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and would be required to implement measures to minimize impacts to hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, as necessary. The proposed project would be required to comply with applicable federal, state, and local regulations related to hazardous materials. The required compliance with these regulations would ensure impacts related to transport, use and disposal of hazardous materials would be less than significant.

Future projects that propose to demolish or renovate structures on site that were constructed prior to 1980 may contain lead-based paint and asbestos-containing materials. In accordance with existing regulations, future wind turbines would be required to complete asbestos and lead surveys to determine the presence or absence of asbestos-containing materials or lead-based paint prior to issuance of a building permit that includes demolition of on-site structures and prior to commencement of demolition or renovation activities.

Temporary construction activities on the project site would involve the use and storage of commonly used hazardous materials such as gasoline, diesel fuel, lubricating oil, grease and other vehicle and equipment maintenance fluids should the facilities require grading/excavation. These materials would be used and stored in designated construction staging areas within the project site boundaries. Also, temporary construction activities could involve transportation of wastes from demolition/renovation of structures. These hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone, and use of these materials for their intended purpose, would not pose a significant risk to the public or the environment.

Depending on the size and extent of the large wind turbine projects, the County may require the preparation of project-specific Hazardous Materials Business Plans (HMBP) and/or Risk Management Plans (RMP), pursuant to the requirements in the County's *Guidelines for Determining Significance: Hazardous Materials and Existing Contamination* (County of San Diego 2007a). The HMBP would include three sections: (1) an inventory of hazardous materials, including a site map, which details their location; (2) an emergency response plan; and (3) an employee-training program (County of San Diego 2007a). The plan contains basic information on the location, type, quantity, and health risks of the hazardous substances stored, handled, or disposed of at the site, and serves to aid employers and employees in managing emergencies at a given facility and to better prepare emergency response personnel for handling a wide range of emergencies. Due to regulatory requirements related to hazardous substances outlined above and the fact that the initial planning, ongoing monitoring, and inspections would occur in compliance with local, state, and federal regulation, the project would **not result in potentially significant impacts** related to the routine transport, use, and disposal of hazardous substances.

2.6.3.2 Accidental Release of Hazardous Materials

Guidelines for Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Hazardous Materials and Existing Contamination* (County of San Diego 2007a) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis.

A significant impact would result if:

- The project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Analysis

The proposed Zoning Ordinance amendment applies to the entire unincorporated County with regard to small turbines and MET facilities and to a significant portion of the unincorporated County with regard to large turbines (see Section 1.4, Project Description); therefore, it includes all hazardous materials in the County. The proposed project would allow development of wind turbines and MET facilities in the County which could allow accidental release of hazardous materials into the environment during construction activities or in the event of a natural disaster, human error or misuse.

Numerous federal, state, and local regulations exist that reduce the potential for humans or the environment to be affected by an accidental release of hazardous materials. These include, but are not limited to, the following: (1) Chemical Accident Prevention Provision; (2) RCRA; (3) Robert T. Stafford Disaster Relief and Emergency Assistance Act; (4) California Health and Safety Code; (5) CCR Title 23; (6) Aboveground Petroleum Storage Act; (7) CalARP; (8) Emergency Response to Hazardous Materials Incidents; (9) California Emergency Services Act; and (10) County Consolidated Fire Code. The DEH-HMD is also required to conduct ongoing routine inspections to ensure compliance with existing laws and regulations; to identify safety hazards that could cause or contribute to an accidental spill or release; and to suggest preventative measures to minimize the risk of a spill or release of hazardous substances.

Small Turbine(s) and MET Facilities

Future small wind turbines or MET facilities would have limited accidental release of hazards to the environment since the proposed project are accessory structures and does not involve the routine use and storage of hazardous materials. The only potentially toxic or hazardous materials are relatively small amounts of lubricating oils and hydraulic and insulating fluids. Future small wind turbines would not result in a significant hazard to the public or environment because storage, handling, transport, emission, and disposal of hazardous substances, if any, would be in full compliance with local, state, and federal regulations. Compliance with such regulations would minimize the potential for a release to occur and provide planning mechanisms for prompt and effective cleanup if an accidental release occurred. Because projects are required to comply with local, state, and federal regulation, impacts to accidental release of hazardous materials into the environment would be **less than significant.**

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large wind turbines. These updates are necessary to address advancements in technology that have obviated many of the current provisions. The proposed amendments related to large wind

turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible. All future large turbine projects would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and would be required to implement measures to minimize impacts to hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, as necessary. Temporary construction activities on the project site would involve the use and storage of commonly used hazardous materials such as gasoline, diesel fuel, lubricating oil, grease and other vehicle and equipment maintenance fluids should the facilities require grading/excavation. These materials would be used and stored in designated construction staging areas within the project site boundaries. Also, temporary construction activities could involve transportation of wastes from demolition/renovation of structures. These hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone, and use of these materials for their intended purpose, would not pose a significant risk to the public or the environment. The proposed project would be required to comply with applicable federal, state, and local regulations related to the transportation, use, storage, and disposal of hazardous materials. Compliance with such regulations would minimize the potential for a release to occur and provide planning mechanisms for prompt and effective cleanup if an accidental release occurred. Therefore, impacts to accidental release of hazardous materials into the environment would be **less than significant**.

2.6.3.3 Hazards to Schools

Guidelines for Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Hazardous Materials and Existing Contamination* (County of San Diego 2007a) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis.

A significant impact would result if:

- The project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Analysis

The proposed Zoning Ordinance amendment applies to the entire unincorporated County with regard to small turbines, MET facilities, and to a significant portion of the unincorporated County with regard to large turbines (see Section 1.4, Project Description). Almost all land uses within the County have the potential to use, store, transport and dispose of hazardous materials

which could potentially emit hazardous emissions or have hazardous substances within one-quarter mile of a school. Even schools may use and dispose of hazardous materials, such as cleaning products or laboratory chemicals, that potentially pose a risk to the public.

Federal and state regulations exist that reduce hazardous emissions and hazardous materials handling within one-quarter mile of an existing or proposed school. These include, but are not limited to, CHHSLs and the CEC. Additionally, all County permits that include storage, handling, transport, emission and disposal of hazardous substances would be in full compliance with local, state, and federal regulations. California Government Code Section 65850.2 requires that no final certificate of occupancy or its substantial equivalent be issued unless there is verification that the owner or authorized agent has met, or is meeting, the applicable requirements of the Health and Safety Code, Division 20, Chapter 6.95, Article 2, Sections 25500 through 25520. The County's DEH-HMD is required to regulate hazardous materials business plans and chemical inventory, hazardous waste and tiered permitting, underground storage tanks, and risk management plans.

Small Turbine(s) and MET Facilities

Small wind turbine or MET facility projects could be located within one-quarter mile of an existing or proposed school. Future project sites could include facilities listed in the EPA's Resource Conservation and RCRIS as a Hazardous Materials Handler or include a permitted facility in the County Hazardous Materials Establishment database. However, the only potentially toxic or hazardous materials associated with the proposed project are relatively small amounts of lubricating oils and hydraulic and insulating fluids. Additionally, future projects would be in full compliance with local, state, and federal regulations.

Due to the regulatory requirements related to hazardous substances outlined in Section 2.6.2 and the fact that the initial planning, ongoing monitoring, and inspections would occur in compliance with local, state, and federal regulation, the project **would not result in any potentially significant impacts** related to the hazardous emissions or handling of hazardous substances, or waste within one-quarter mile of an existing or proposed school.

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large wind turbines. These updates are necessary to address advancements in technology that have obviated many of the current provisions. The proposed amendment related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible. All future large turbine projects would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's

discretionary review process, all future projects would be evaluated under CEQA and would be required to implement measures to minimize impacts to hazards within one-quarter mile of an existing or proposed school. CEQA requires proposed projects to provide detailed information on the potentially significant environmental effects they are likely to have, list ways in which the significant environmental effects would be minimized, and identify alternatives that would reduce or avoid the significant impacts identified for the proposed project. However, the only potentially toxic or hazardous materials associated with the proposed project are relatively small amounts of lubricating oils and hydraulic and insulating fluids. Additionally, future projects would be in full compliance with local, state, and federal regulations.

Temporary construction activities on the project site would involve the use and storage of commonly used hazardous materials such as gasoline, diesel fuel, lubricating oil, grease and other vehicle and equipment maintenance fluids should the facilities require grading/excavation. These materials would be used and stored in designated construction staging areas within the project site boundaries. Also, temporary construction activities could involve transportation of wastes from demolition/renovation of structures. These hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials thereby limiting hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Consequently, the materials alone, and use of these materials for their intended purpose, would not pose a significant risk to the public or the environment.

Due to the regulatory requirements related to hazardous substances outlined previously in Section 2.6.2, and the fact that the initial planning, ongoing monitoring, and inspections would occur in compliance with local, state, and federal regulation, the project **would not result in any potentially significant impacts** related to risks associated with hazardous emissions or handling of hazardous substances, or waste within one-quarter mile of an existing or proposed school.

2.6.3.4 Existing Hazardous Materials Sites

Guidelines for Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Hazardous Materials and Existing Contamination* (County of San Diego 2007a) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis.

A significant impact would result if:

- The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code, Section 65962.5, and, as a result, would create a significant hazard to the public or the environment.

Analysis

The proposed Zoning Ordinance amendment applies to the entire unincorporated County with regard to small turbines, facilities, and to a significant portion of the unincorporated County with regard to large turbines (see Section 1.4, Project Description); therefore, it includes hazardous materials sites compiled pursuant to Government Code, Section 65962.5 within the County. The proposed project would allow development of wind turbines and MET facilities on a site that could be included on a list of hazardous materials sites compiled pursuant to Government Code, Section 65962.5 that could disturb existing hazardous material sites through ground-disturbing activities, such as excavation and grading, which have the potential to uncover buried underground storage tanks or other buried hazards.

Small Turbine(s) and MET Facilities

Future small wind turbines or MET facility may be located on a site listed in the State of California Hazardous Waste and Substances sites list compiled pursuant to Government Code, Section 65962.5. However, the project would not create a significant hazard to the public or the environment because if a property is on the list, the County would not issue a Building Permit until any significant hazard has been referred to and remediated to the satisfaction of the DEH. Because remediation of the site would occur prior to issuance of a Building Permit, the project would not create a significant hazard to the public or the environment and would not contribute to a significant impact. Therefore, although a project site could be listed, the project **would not create a significant hazard** to the public or the environment because all site remediation and cleanup would have occurred prior to issuance of a Building Permit.

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large wind turbines. These updates are necessary to address advancements in technology that have obviated many of the current provisions. The proposed amendment related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible. All future large turbine projects would be subject to discretionary review and required to obtain a MUP. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and would be required to implement measures to minimize impacts to sites that are included on the list of hazardous materials sites compiled pursuant to Government Code, Section 65962.5. CEQA requires proposed projects to provide detailed information on the potentially significant environmental effects they are likely to have, list ways in which the significant environmental effects would be minimized, and identify alternatives that would reduce or avoid the significant impacts identified for the proposed project. However, future large wind turbines may be located on a site listed in

the State of California Hazardous Waste and Substances sites list compiled pursuant to Government Code, Section 65962.5. The proposed project would not create a significant hazard to the public or the environment because if a property is on the list, the County would not issue a Building Permit until any significant hazard has been referred to and remediated to the satisfaction of the DEH. Therefore, although a project site could be listed, the project **would not create a significant hazard** to the public or the environment because all site remediation and cleanup would have occurred prior to issuance of the MUP.

*2.6.3.5 **Airport Hazards***

Guidelines for Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Airport Hazards* (County of San Diego 2007b) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis.

A significant impact would result if:

- The project would locate development within an airport land use plan or, where such a plans has not been adopted, within 2 miles of a public airport or public use airport, and would result in a safety hazard for people residing or working in the project area.
- The project would locate development within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.

Analysis

The main compatibility concerns for the protection of airport airspace are related to airspace obstructions (building height, antennas, etc.) and hazards to flight (wildlife attractants, distracting lighting or glare, etc.). The proposed Zoning Ordinance amendment applies to the entire unincorporated County with regard to small turbines and MET facilities and to a significant portion of the unincorporated County with regard to large turbines (see Section 1.4, Project Description). Therefore, the proposed project may be located within an Airport Influence area, within 2 miles of a public airport, within the safety zone for an airport, or within a private airstrip and could potentially result, in a safety risk.

Small Turbine(s) and MET Facilities

Small wind turbines or MET facilities may be located within an airport land use plan or within 2 miles of a public airport or public use airport, or in the vicinity of a private airstrip. These facilities are accessory structures and would not increase population density from implementation of the proposed project. Small wind turbines shall not exceed 80 feet in height

and MET facilities would be limited to 200 feet. No exterior lighting would be allowed for either facility except when required by federal law, such as the Federal Aviation Administration (FAA) or other government agency. The County's *Guidelines for Determining Significance: Airport Hazards* (2007b) states that construction not exceeding 200 feet above ground level generally does not require notice to the FAA. These projects are not expected to affect navigable airspace. Additionally, future small wind turbines would not result in hazards to airport safety or surrounding land uses for the following reasons:

- Such projects would comply with the California Land Use Planning Handbook's Safety Compatibility Criteria for Safety Compatibility Zones.
- Such projects would have to be determined to be compatible with the applicable ALUCP and Compatibility Policies for the Airport by the San Diego County Regional Airport Authority.
- If a wind energy facility is located within the FAA Height Notification Surface due to its proximity to an airport, notice will be filed with the FAA. The applicant would complete the FAA Form 7460-1, Notice of Proposed Construction or Alteration, and submit the form to the FAA for review. The FAA would review the project and identify if the project is an airspace obstruction or hazard. If not, the project would comply with the FAA Regulations Part 77, Objects Affecting Navigable Airspace.

Based on the proposed project's required compliance with federal and state regulations that would prevent hazards to the public and environment near public and private airports, small wind turbines and MET facilities developed under the proposed Zoning Ordinance amendment would have a **less-than-significant impact** on airport hazards.

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large wind turbines. These updates are necessary to address advancements in technology that have obviated many of the current provisions. The proposed amendment related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible. All future large turbine projects would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and would be required to comply with federal and state regulations (i.e., California Land Use Planning Handbook's Safety Compatibility Criteria for Safety Compatibility Zones, ALUCP, FAA) that would prevent hazards to the public and environment near public and private airports. Therefore, the project **would not create a significant hazard** to an airport land use plan, within 2 miles of a

public airport or public use airport, or within the vicinity of a private airstrip that would result in a safety hazard for people residing or working in the project area.

2.6.3.6 Emergency Response and Evacuation Plans

Guidelines for Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Hazardous Materials and Existing Contamination* (County of San Diego 2007a) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis.

A significant impact would result if:

- The project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Analysis

Interference with an adopted emergency response or evacuation plan would result in an adverse physical effect to people or the environment by potentially increasing the loss of life and property in the event of a disaster. Development that proposes large concentrations of people or special needs individuals, such as stadiums or hospitals, in an area with increased hazards, such as a dam inundation area, could cause adverse effects related to the implementation of emergency response and evacuation plans such as the Multi-Jurisdictional Hazard Mitigation Plan or the Dam Evacuation Plan. Certain tall structures can physically interfere with the implementation of an emergency response if the height of the structure or tower interferes with the ability of emergency air support services to carry out missions associated with an emergency response.

Small Turbine(s) and MET Facilities

Implementation of small wind turbines and MET facilities would not result in an increase in population that is unaccounted for or an increase in population that an emergency response team is unable to service. The height of small wind turbines shall not exceed 80 feet and MET facilities would be limited to 200 feet. Therefore, as stated in Section 2.6.3.5, these projects are not expected to affect navigable airspace and thus would not interfere with emergency air support services (County of San Diego 2007b). Lastly, future small wind turbines and MET facilities would not result in the obstruction of multiple evacuation or access roads. Therefore, future small wind turbines and MET facilities would not impair existing emergency response and evacuation plans impacts would be **less than significant**.

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large wind turbines. These updates are necessary to address advancements in technology that have obviated many of the current provisions. The proposed amendment related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible. All future large turbine projects would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA.

Future large wind turbines would not result in an increase in population that an emergency response team is unable to service. Future large turbines could, however, propose tall structures that could potentially affect the ability of emergency air support services to carry out missions associated with an emergency response. Future large wind turbines may also result in obstructions on roads that are used as emergency access or evacuation. However, the County reviews development proposals for consistency with the following plans/regulations: (1) the Statewide Standardized Emergency Management System; (2) the San Diego County Nuclear Power Station Emergency Response Plan; (3) the Oil Spill Contingency Element; (4) the Emergency Water Contingencies Annex and Energy Shortage Response Plan; (5) and the Dam Evacuation Plan. This process ensures that potential issues do not result in significant impacts or impairments to existing emergency response and evacuation plans. Therefore, impacts would be **less than significant**.

2.6.3.7 Wildland Fires

Guidelines for Determination of Significance

For the purpose of this EIR, the County's *Guidelines for Determining Significance: Hazardous Materials and Existing Contamination* (County of San Diego 2007a) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis.

A significant impact would result if:

- The project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Analysis

The proposed Zoning Ordinance amendment applies to the entire unincorporated County with regard to small turbines, MET facilities and to a significant portion of the unincorporated County

with regard to large turbines (see Section 1.2, Project Description); therefore, it includes all areas subject to wildland fires. The vast majority of the unincorporated County is ranked through FRAP as having High or Very High fire hazard severity. Additionally, approximately 575,434 acres of the unincorporated County are considered to be within WUI areas, which are at higher risk of adverse effects from wildfire events.

Small Turbine(s) and MET Facilities

Small wind turbines or MET facilities may be located in areas that are completely surrounded by urbanized areas and/or irrigated lands, and where there are no adjacent wildland areas. Therefore, future wind turbines located in an urban area are not anticipated to expose people or structures to a significant risk of loss, injury, or death involving hazardous wildland fires.

Some future wind turbine or MET facilities may be located within and served by independent fire protection districts and may also be located adjacent to wildlands that have the potential to support wildland fires. Construction activities that may result in ignition sources would include vegetation clearing and piling, grading, site preparation, soil disturbances, concrete pouring and preparation, pole and turbine placement and construction and refueling. These construction activities may include presence of vehicles, heavy equipment, heat-generating equipment and activities, sparks from various sources, and potentially discarded cigarettes, among others, as well as use of fuels, and combustible materials during construction and infrastructure installation.

Implementation of the proposed project would include generation and transmission of electric current from the wind turbines. Operation of the proposed project may result in vegetation ignitions and wildfire from equipment failure (e.g., turbine blade, braking, oil heating, lightning, nacelle, transformers, circuit breakers), transmission line arcing, and pole failure, among others. Operation of the facility requires on-site presence of humans, vehicles, moving wind-driven generators and related parts, and increased activity in the area.

Maintenance would include the presence of humans and vehicles as well as heat- and spark-generating equipment on occasion. Maintenance activities for small wind turbines and MET facilities usually occur every 1 to 3 years, or as needs arise, and may not require vehicle trips. Frequently, annual maintenance may consist of the property owner visually inspecting facilities with a pair of binoculars and also checking that bearings are lubricated. If additional maintenance is required, it is anticipated that one vehicle and a small amount of equipment would access the site. It is possible that maintenance processes, such as repairs or replacements, could result in sparks or heat sources.

The potential risk of wildfire ignition and spread associated with construction, operation, and maintenance of the proposed project can be managed and pre-planned so that the potential for

vegetation ignition is minimized. In addition, pre-planning and personnel fire awareness and suppression training not only results in lower probability of ignition, but also in higher probability of fire control and extinguishment in its incipient stages.

Federal, state, and County regulations exist that reduce hazards to the public and environment from wildland fires. These include, but are not limited to, the following: (1) the California the Natural Disaster Assistance Act; (2) County Vegetation and Other Flammable Materials Ordinance; (3) Fire Protection Plans; and (4) County Consolidated Fire Code.

A majority of the unincorporated County is located in High or Very High fire hazard severity areas. The proposed project would allow small wind turbines or MET facilities without discretionary review if they meet the zoning verification requirements in the amended ordinance. While existing County policies and regulations are intended to reduce impacts associated with wildland fires, no environmental review would be required prior to development of these projects. Where development does not require discretionary review, complete avoidance of impacts that could result from this development would not be possible. Therefore, the proposed project may result in a potentially significant impact involving wildland fires **(HAZ-1)**.

Large Turbine(s)

The proposed project amends certain provisions of the County's Zoning Ordinance related to large wind turbines. These updates are necessary to address advancements in technology that have obviated many of the current provisions. The proposed amendment related to large wind turbines consist of updated definitions and requirements related to setbacks, noise, height, and locations where large turbines are permissible.

Large wind turbines can be the source of wildfire ignitions due to short-circuits, collection line failure, turbine malfunction or mechanical failure, and lightning. When mechanical or electrical failures cause turbines to catch fire, they may burn for many hours due to the limited ability of fire suppression crews to effectively fight fires hundreds of feet above the ground. Wind-blown flaming debris from a turbine fire can ignite vegetation in the surrounding area. However, most modern turbines are equipped with lightning arresters and automatic fire detection systems (CPUC and BLM 2008). Fire suppression systems may also be installed in the wind turbine nacelle.

Construction activities that may result in ignition sources would include vegetation clearing and piling, grading, site preparation, soil disturbances, concrete pouring and preparation, pole and turbine placement and construction and refueling. These construction activities would include presence of vehicles, heavy equipment, heat-generating equipment and activities, sparks from various sources, and potentially discarded cigarettes, among others, as well as use of fuels, and combustible materials during construction and infrastructure installation.

Transformers located at the base of large wind turbine towers may cause fires through arcing that occurs following failure of insulation within the transformer. Industry statistics indicate that one in five transformer failures result in a fire (USDI 2005). The extremely hot arc may cause oils to combust, metals to be vaporized, and molten copper to be thrown into the air (USDI 2005). Explosions sometimes occur from the vaporization of mineral oils and release of carbon monoxide.

All future large turbine projects would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and required to implement the maximum feasible mitigation measures. The potential risk of wildfire ignition and spread associated with construction, operation, and maintenance of large wind turbines can be managed and pre-planned so that the potential for vegetation ignition is minimized. Pre-planning and personnel fire awareness and suppression training also results in lower probability of ignition and higher probability of fire control and extinguishment in its incipient stages. Additionally, federal, state, and county regulations exist that reduce hazards to the public and environment from wildland fires. These include, but are not limited to, the following: (1) NDAA, which provides assistance in the event of an emergency; (2) County Vegetation and Other Flammable Materials Ordinance, which addresses the accumulation of weeds, rubbish, and other materials that can create fire hazards, which ensures adequate defensible space to prevent wildland fires; (3) FPPs, which require the review and analysis of fire hazards in projects under discretionary review; and (4) County Consolidated Fire Code, which has requirements more stringent than state requirements with regards to access roadways, building ignition-resistant construction, vegetation clearance, water supply, and locations of structures on property.

However, there is ultimately no guarantee on a project-specific level that mitigation measures would reduce impacts to a level below significant relative to wildfires; therefore, the proposed project may result in significant impacts related to wildland fires **(HAZ-2)**.

2.6.4 Cumulative Impact Analysis

The geographic scope of cumulative impact analysis for hazardous materials varies depending on the type of resource with potential to be impacted. Geographic scope can be the entire area within which the resource has the potential to occur. For the purpose of this EIR, the geographic scope for the cumulative analysis of hazardous materials includes the San Diego region, which encompasses the entire County, including both incorporated and unincorporated areas, as well as surrounding counties, and tribal and public agency lands.

2.6.4.1 Hazardous Substance Handling

Cumulative projects located in the San Diego region could have the potential to result in a cumulative impact associated with hazards to the public or the environment involving the use, storage, disposal, or transport of hazardous materials. Additionally, the transportation of hazardous materials would increase in the region as a result of an expanded and improved highway system, as proposed in the San Diego Association of Governments (SANDAG) Regional Transportation Plan (RTP) and Regional Comprehensive Plan (RCP). Cumulative projects that would have the potential to result in adverse impacts to hazards from development activities include the General Plan and the development of land uses as designated under surrounding jurisdictions general plans. However, similar to the proposed project, cumulative projects would be required to comply with regulations applicable to the use, disposal, and transportation of hazardous materials, including RCRA, CERCLA, the Hazardous Materials Transportation Act, IFC, and CCRs Title 22 and Title 27. Cumulative projects in Mexico would not be subject to the previously mentioned regulations; however, hazardous materials from Mexico into the U.S. would be required to comply with the above mentioned regulations.

Small Turbine(s)/MET Facilities

Small wind turbines and MET facilities would be required to comply with regulations applicable to the use, disposal, and transportation of hazardous materials, including RCRA, CERCLA, the Hazardous Materials Transportation Act, International Fire Code, and CCR Title 22 and Title 27. Therefore, in combination with other past, present, and foreseeable future projects, the proposed project **would not contribute to a cumulatively considerable impact** to the use, disposal, and transportation of hazardous materials.

Large Turbine(s)

Large wind turbine(s) would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and required to comply with regulations applicable to the use, disposal, and transportation of hazardous materials, including RCRA, CERCLA, the Hazardous Materials Transportation Act, International Fire Code, and CCR Title 22 and Title 27. Therefore, the proposed project **would not contribute to a cumulatively considerable impact** to the use, disposal, and transportation of hazardous materials.

2.6.4.2 Accidental Release of Hazardous Materials

Implementation of various cumulative projects, such as private projects, would increase the likelihood of hazards to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Generally, as the population increases, services and industries, such as dry cleaners and industrial manufacturing, which commonly store, use and dispose of hazardous materials, would increase to service the expanding population. As the services and industries that use hazardous materials increase, the risk of accidental release associated with these services and industries would also increase. Cumulative projects would be subject to regulations regarding the handling of hazardous materials. These regulations would reduce the risks associated with an accidental release of hazardous materials from cumulative projects.

Small Turbine(s) and MET Facilities

Small wind turbines and MET facilities would be required to comply with regulations regarding the handling of hazardous materials, such as Chemical Accident Prevention Provision, RCRA, Robert T. Stafford Disaster Relief and Emergency Assistance Act, California Health and Safety Code, CCR Title 23, Aboveground Petroleum Storage Act, CalARP, Emergency Response to Hazardous Materials Incidents, and the California Emergency Services Act. These regulations would reduce the risks associated with accidental release of hazardous materials and provide planning for prompt and effective cleanup in the event of an accidental release. Therefore, the proposed project **would not contribute to a cumulatively considerable impact** to accidental use of hazardous materials.

Large Turbine(s)

Large wind turbine(s) would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and required to comply with applicable federal, state, and local regulations related to the transportation, storage and use of hazardous materials. Compliance with such regulations would minimize the potential for an accidental hazardous materials release to occur and provide planning for prompt and effective cleanup in the event of an accidental release. Therefore, the proposed project **would not contribute to a cumulatively considerable impact** to accidental use of hazardous materials.

2.6.4.3 Hazards to Schools

Cumulative projects in the region, such as the County General Plan Update, SANDAG RCP, SANDAG RTP, and various energy projects, would increase infrastructure, services, and the quality of life in the area to accommodate regional population growth. As population increases in the region, public services, such as schools, and industries and services that use hazardous materials, such as manufacturing and dry cleaners, would concurrently increase. Proposed schools could potentially be located in the vicinity of facilities that emit hazardous emissions or handle hazardous or acutely hazardous materials, while existing schools could be affected by

new or expanded facilities that use hazardous waste. However, cumulative projects would be subject to local, state, and federal requirements as described in Section 2.6.2.

Small Turbine(s) and MET Facilities

Small wind turbines and MET facilities would be required to comply with applicable federal, state, and local regulations pertaining to hazardous wastes which would ensure that risks associated with hazardous emissions and schools would remain less than significant. Therefore, the proposed project **would not contribute to a cumulatively considerable impact** to hazards within one-quarter mile to schools.

Large Turbine(s)

Large wind turbine(s) would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and required to comply with applicable federal, state, and local regulations pertaining to hazardous wastes which would ensure that risks associated with hazardous emissions and schools would remain less than significant. Therefore, the proposed project **would not contribute to a cumulatively considerable impact** to hazards within one-quarter mile to schools.

2.6.4.4 Existing Hazardous Materials Sites

It is reasonable to assume that surrounding jurisdictions have multiple existing hazardous materials sites, pursuant to California Government Code, Section 65962.5, similar to the County. Therefore, implementation of cumulative projects may result in the location of a project on a site with existing hazardous materials issues, which would result in a potentially significant impact to the public or environment. However, most cumulative projects would be required to undergo environmental review, in addition to abiding by applicable regulations that prevent risks associated with existing hazardous materials sites, such as CERCLA, PRGs, Cortese List, and CHHSLs.

Small Turbine(s) and MET Facilities

Small wind turbines and MET facilities may be located on a project site with existing hazardous materials issues. However, these facilities would be required to comply with applicable federal, state, and local regulations and County policies related to existing on-site hazardous materials contamination. Additionally, if a property site is on the list of hazardous materials sites, pursuant to Government Code Section 65962.5, the County would not issue a building permit until any significant hazard has been referred to and remediated to the satisfaction of the DEH. Therefore, the proposed project **would not contribute to a cumulatively considerable impact** to existing hazardous materials site.

Large Turbine(s)

Large wind turbine(s) would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and required to comply with applicable federal, state, and local regulations and County policies related to existing on-site hazardous materials contamination. Additionally, if a property site is on the list of hazardous materials sites, pursuant to Government Code Section 65962.5, the County would not issue a building permit until any significant hazard has been referred to and remediated to the satisfaction of the DEH. Therefore, the proposed project **would not contribute to a cumulatively considerable impact** to existing hazardous materials site.

2.6.4.5 Airport Hazards

Cumulative projects, such as general plans in surrounding jurisdictions or developments on tribal lands or within Mexico, could potentially result in incompatible land uses within the vicinity of a public or private airport. This could result in a potentially significant safety hazard for people residing or working in these project areas. However, cumulative projects would be subject to safety regulations, such as ALUCPs, FAA standards, DOD standards, and the State Aeronautics Act, which would reduce the potential for safety hazards to below a level of significance.

Small Turbine(s)/MET Facilities

Small wind turbines and MET facilities could be located within the vicinity of a public or private airport. The proposed project would comply with applicable safety regulations, such as ALUCPs, FAA standards, DOD standards, and the State Aeronautics Act. Therefore, the proposed project **would not contribute to a cumulatively considerable impact** to public or private airports.

Large Turbine(s)

Large wind turbine(s) would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and required to comply with applicable safety regulations, such as ALUCPs, FAA standards, DOD standards, and the State Aeronautics Act. Therefore, the proposed project **would not contribute to cumulative considerable impact** to public or private airports.

2.6.4.6 Emergency Response and Evacuation Plans

Cumulative projects, such as development consistent with surrounding jurisdictions general plans, energy projects, or private projects not included in the County General Plan Update, would have the potential to impair existing emergency and evacuation plans. This could occur

from any of the following: (1) an increase in population that is induced from cumulative projects which are unaccounted for in emergency plans; (2) an increase in population that emergency response teams are unable to service adequately in the event of a disaster; (3) evacuation route impairment if multiple development projects concurrently block multiple evacuation or access roads. However, cumulative projects would be required to comply with applicable emergency response and evacuation policies outlined in regulations such as the Federal Response Plan, the California Emergency Services Act, and local fire codes.

Small Turbine(s)/MET Facilities

As described in Section 2.6.3.6, the proposed project would be consistent with applicable emergency response plans or emergency evacuation plans. Additionally, cumulative projects would be required to comply with applicable emergency response and evacuation policies outlined in regulations such as the Federal Response Plan, the California Emergency Services Act, and local fire codes. Therefore, due to existing regulations, the proposed project **would not contribute to a cumulatively considerable impact** to emergency response and evacuation plans.

Large Turbine(s)

As described in Section 2.6.3.6, large wind turbine(s) would be consistent with applicable emergency response plans or emergency evacuation plans. Large wind turbine(s) would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and required to comply with applicable emergency response and evacuation policies outlined in regulations such as the Federal Response Plan, the California Emergency Services Act, and local fire codes. Therefore, due to the required compliance with the regulations previously mentioned, the proposed project **would not contribute to a cumulatively considerable impact** to emergency response and evacuation plans.

2.6.4.7 Wildland Fires

A majority of the unincorporated County is located in High or Very High fire hazard severity zones. Some cumulative projects would occur in these areas which would expose people and structures to a potentially significant loss of life and property. Growth occurring in the San Diego region, implemented under various cumulative projects, would likely place people and/or property within danger of wildland fires, due to the widespread risk across the region. Although regulations exist to reduce hazards associated with wildland fires, they would not reduce the risk to below a level of significance.

Small Turbine(s)/MET Facilities

Some future small wind turbines may be developed in High or Very High fire hazard severity areas without discretionary review if they meet the zoning verification requirements in the amended ordinance. While existing regulations in the County and surrounding jurisdiction are in place to reduce impacts associated with wildland fires, no environmental review would be required prior to development of these projects. Where development does not require discretionary review, avoidance of significant impacts that could result from this development would not be possible. Therefore, the proposed project **may contribute to a cumulatively considerable impact** related to wildland fires **(HAZ-3).**

Large Turbine(s)

Large wind turbine(s) would be subject to discretionary review and required to obtain a Major Use Permit. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and required to implement the maximum feasible mitigation measures. However, as there is ultimately no guarantee that mitigation measures would reduce impacts to a level below significant relative to wildfires, the proposed project **may contribute to a cumulatively considerable impact** related to wildland fires. **(HAZ-4)**

2.6.5 Significance of Impacts Prior to Mitigation

The proposed project would result in potentially significant impacts associated wildfires, prior to mitigation due to the development of small wind turbines, MET facilities, and large wind turbines. The proposed project would not result in potentially significant impacts associated with hazardous materials, hazards involving public and private airports and emergency response and evacuation plans.

2.6.6 Mitigation Measures

2.6.6.1 Hazardous Substance Handling

The proposed project would not result in potentially significant impacts related to the routine transport, use, and disposal of hazardous substances, and no mitigation measures are required.

2.6.6.2 Accidental Release of Hazardous Materials

The proposed project would not result in potentially significant impacts related to the accidental release of hazardous materials into the environment, and no mitigation measures are required.

2.6.6.3 Hazards to Schools

The proposed the project would not result in any potentially significant impacts related to risks associated with hazardous emissions or handling of hazardous substances, or waste within one-quarter mile of an existing or proposed school, and no mitigation measures are required.

2.6.6.4 Existing Hazardous Materials Sites

The proposed project would not create a significant hazard to the public or the environment from the development of hazardous materials sites pursuant to Government Code, Section 65962.5, and no mitigation measures are required.

2.6.6.5 Airport Hazards

The proposed project will not create significant impacts to an airport land use plan, within 2 miles of a public airport or public use airport, or within the vicinity of a private airstrip that would result in a safety hazard for people residing or working in the project area, and no mitigation measures are required.

2.6.6.6 Emergency Response and Evacuation Plans

The proposed the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and no mitigation measures are required.

2.6.6.7 Wildland Fires

The proposed project would allow for development of small turbines and MET facilities without discretionary review when these facilities meeting the zoning verification requirements, thus leaving no mechanism to enforce mitigation measures. Large turbines would be subject to discretionary review and required to obtain a Major Use Permit. Mitigation measures (described below) have been identified that would reduce impacts to wildland fires, but not below a significant level.

Mitigation Measures

M-HAZ-1: During the environmental review process for future discretionary permits for wind turbines, the County Guidelines for Determining Significance for Wildland Fire & Fire Protection shall be applied. When impacts are determined to be significant, feasible and appropriate project-specific mitigation measures shall be incorporated. Examples of standard mitigation measures within the County Guidelines include: installation of fire suppression systems; sufficient on-site

water storage; inclusion of fire management zones; and funded agreements with fire protection districts.

Infeasible Mitigation Measures

The following measure was considered in attempting to reduce direct and cumulative impacts associated with wildland fires within the County to below a level of significance. However, it has been determined that this measure is infeasible for reasons described as follows. Therefore, this measure would not be implemented.

- Prohibit construction of wind turbines in High and Very High fire hazard severity zones. This measure would be infeasible because the vast majority of unincorporated San Diego County is ranked through FRAP as having High or Very High fire hazard severity. This prohibition throughout most of the County's jurisdiction would conflict with the project objectives to facilitate the use of renewable wind energy within the County, to maximize the production of energy from renewable wind sources, and to reduce the potential for energy shortages and outages by facilitating local energy supply.

As it cannot be concluded at this stage that impacts related to wildland fires from all future small wind turbines, MET facilities, and large wind turbines allowed by the proposed Zoning Ordinance amendment would be avoided or mitigated, impacts would remain **significant and unavoidable**. Chapter 4, Project Alternatives, provides a discussion of alternatives to the proposed project that would result in some reduced impacts associated with wildland fire hazards as compared to the proposed project.

2.6.7 Other Field-Related Public Concerns or Hazards

Recognizing there is a great deal of public interest and concern regarding potential health effects and hazards from exposure to EMFs and shadow flicker, the following discussion provides information regarding EMFs and shadow flicker as they relate to public health and safety. This discussion does not consider EMFs of shadow flicker in the context of CEQA/NEPA for determination of environmental impact because there is no agreement among scientists that EMFs and shadow flicker create a health risk and because there are no defined or adopted CEQA/NEPA standards for defining health risks from EMFs and shadow flicker. As a result, the EMF and shadow flicker information is provided below for the benefit of the public and decision makers.

Electric and Magnetic Fields

Wind turbines create EMF from the power facilities that are a part of the turbine makeup. EMF attenuates rapidly with distance from the source. The electrical wiring of the wind turbine generator is also surrounded by an electrically conductive metal cover, so any EMF levels

outside of the wind turbine would be very low. Given the setbacks that future wind turbine projects are required to follow, the proposed project is not anticipated to result in measurable levels in EMF at nearby residences that would result in adverse effects to public health or safety. There is inadequate or no evidence of health effects at low exposure levels. The CPUC implemented a decision in 1993 that, in part, implemented a number of EMF measurement, research, and education programs, and provided the direction that led to the preparation of the California Department of Health Services (DHS) comprehensive review of existing studies related to EMFs from power lines and associated potential health risks. The CPUC stated that, "at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences…As stated in the rulemaking initiating this proceeding, at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences" (CPUC 2006).

Stray voltage could occur if the electrical equipment in the turbines is not maintained properly. Induced current or stray voltage has the potential for adverse health effects if not properly grounded. As part of the regular operations and maintenance measures of the project, turbines will be examined to confirm that they are properly grounded and that there are no stray voltage issues through the life of the project. Therefore, no health effects would be anticipated to occur from stray voltage.

The proposed project may also impact communication signals due to EMF in two ways: (1) the wind turbines and their associated transmission lines may generate electromagnetic noise, which can interfere with telecommunications services such as radar, microwave, television, and radio transmissions; or, more commonly, (2) the wind turbines would create physical obstructions that distort communications signals. The types of communications systems that may be affected include microwave systems, off-air television broadcast signals, land mobile radio operations, and mobile telephone services. Future wind turbine projects would comply with FCC regulations and therefore would minimize electromagnetic noise (e.g., impacts to radar, microwave, television, and radio transmissions).

Shadow Flicker

There is currently no published scientific evidence to positively link wind turbines with adverse health effects. The majority of documentation related to non-seizure health impacts due to shadow flicker consists of informal testimonials given by residents or drivers on roadways in proximity to a wind turbine. These testimonials cite headaches, vertigo, nausea, blinding effects, disorientation, loss of balance, and increased levels of stress and anxiety as symptoms directly related to wind turbine shadow flicker. These testimonials are primarily available on websites often cited by anti-wind advocates rather than formal medical literature. Some complaints

regarding these symptoms do appear in more formal materials, but are merely reported and are not studied or discussed in any detail. Several of these sources state that complaints of headaches and other similar symptoms are highly, but not perfectly, correlated with annoyance complaints. To date, the available published, peer-reviewed literature states that no studies or scientific evidence links shadow flicker to adverse health impacts.

Shadow flicker from wind turbines does not cause seizures in persons with photosensitive epilepsy. Data from the Epilepsy Foundation indicates that although the frequency of flashing light that is most likely to cause seizures varies from person to person, generally, the frequency of flashing lights most likely to trigger seizures is between 5 and 30 Hertz (Hz refers to flashes per second). Large modern three-bladed wind turbines generally rotate at approximately 19 revolutions per minute (rpm) or less. Even assuming a slightly faster rotation speed of 20 rpm, the blade passing frequency is approximately 1 Hz (20 rev/min * min/60 sec * 3 blades), is well below the first baseline for the critical frequency of 5 Hz.

A concern that is occasionally raised is that shadow flicker occurring on a roadway could distract drivers and cause accidents. In order to obtain a driver's license, motorists are generally evaluated through a road test on their ability to react appropriately to the various situations they encounter. Shadows on the road way or road side distractions are a common occurrence. A whole segment of the advertising industry has been developed that takes advantage of the passing motorist attention. This includes digital billboards, or commercial electronic-variable message signs (CEVMS), which are allowed under the national Outdoor Advertising Act. Recent studies have not identified any additional risk caused by such signs. Thus, it is highly unlikely that wind turbines or their fleeting shadows will pose any undue risks due to attention-demanding qualities.

Shadows on roadways can be caused by nearby trees or buildings, or the Earth's terrain itself. A car passing through shadows caused by anything can experience shadow flicker at very high frequencies dependent on vehicle speed and the object(s) causing the shadow. Wind turbines, a single passing cloud, or an airplane can cause moving shadows on roadways. Additionally, driving by hybrid poplar trees used as windbreaks or a series of palm trees as landscaping enhancements could cause the same effect. Regardless of the source of the shadow or any other potential change that a driver notices gradually or suddenly, it is generally the responsibility of the motorist to maintain control of their vehicle in the face of any situation they encounter. A moving car would pass quickly through any shadow on a road caused by a wind turbine, and therefore any potential for distraction would be remote. Because vehicles on roadways are not stationary objects, it is not appropriate to include roadways as part of a shadow flicker analysis, as shadow flicker is commonly -defined as alternating changes in light intensity at a given stationary location.

The National Highway Traffic Safety Administration (NHTSA) describes driver distraction as something that could present a serious and potentially deadly danger, and identifies various forms of distracted driving, including cell phone use, texting, drinking, talking with passengers, and using in-vehicle technologies and portable electronic devices, along with less obvious forms of distractions, including daydreaming or dealing with strong emotions. Current research involving motor vehicle accidents have highlighted the increased risk of driver activities that focus on attention diverting activities, such as cell phone use, map reading, etc. and have not identified shadow flicker or shadows in general as a source of driver distraction sufficient to increase the risk of accidents.

The frequency of occurrence of shadow flicker at a given receptor tends to decrease with increasing distance between turbine and receptor. Additionally, the intensity of shadow flicker at a given receptor also decreases with increasing distance between turbine and receptor because the shadow cast by the rotor blade decreases in size as the distance from the turbine increases. The combination of these two factors means that even for receptors which are in a theoretical path of a shadow cast from a proposed turbine, a discernible shadow will not be realized due to the distance between many of these receptors and the proposed turbines.

For receptors which that have the potential to experience shadow flicker from wind turbines, the number of experienced shadow flicker hours is generally small for a number of reasons, including the daily change in the sun's path and cloud cover, the fact that turbines do not operate 100% of the time over the course of the year, and typical setback requirements. Visual impacts related to shadow flicker are analyzed in Section 2.1, Aesthetics.

2.6.8 Conclusion

The following discussion provides a synopsis of the conclusion reached in each of the above impact analyses, and the level of impact that would occur after mitigation measures are implemented.

Hazardous Substance Handling

The proposed project would not result in any potentially significant impacts to the transportation, use and disposal of hazardous materials.

Accidental Release of Hazardous Materials

The proposed project would not result in significant adverse effects to the accidental release of hazardous materials.

Hazards to Schools

The proposed project would not result in significant adverse effect to hazardous emissions or involve hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Existing Hazardous Materials Site

The proposed project would not result in significant adverse effect to existing hazardous materials sites.

Public and Private Airports

Development of small wind turbines, temporary MET facilities, and large wind turbines pursuant to the proposed Zoning Ordinance amendment would not result in significant adverse effects to an airport land use plan or within 2 miles of a public airport or public use airport, or in the vicinity of a private airstrip.

Emergency Response and Evacuation Plans

Development of future small wind turbines, temporary MET facilities and large wind turbines pursuant to the proposed Zoning Ordinance amendment would not result in significant adverse effects to emergency response and evacuation plans.

Wildland Fires

Development of small wind turbines and temporary MET facilities pursuant to the proposed Zoning Ordinance amendment would result in significant adverse effects to wildland fires. Development of large wind turbines pursuant to the proposed Zoning Ordinance amendment could result in significant impacts. The environmental design considerations and mitigation measures would reduce direct and cumulative impacts to wildland fires, but not to below a level of significance. While future wind turbine projects pursuant to the Zoning Ordinance may be able to avoid or mitigate impacts to a level below significant on an individual basis, this cannot be guaranteed and incremental impacts are likely to contribute to cumulatively considerable fire hazards in the County's jurisdiction. Therefore, impacts are considered to be significant and unavoidable.

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